

CLAIMS

1. A fuel level sensor having a magnetic position sensor connected to an arm for attachment to a float, wherein the magnetic position sensor comprises a stator and a movable part, the stator having two soft magnetic pieces defining an air gap which contains a magnetosensitive probe for measuring the variation in induction in the gap, the moveable part comprising a yoke of soft magnetic material displaceable parallel to the magnetic pieces of the stator, and a magnet partly embedded in a cavity in the yoke facing the stator, the poles of the magnet being polarized perpendicularly to direction of movement of the moveable part relative to the stator.  
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2. A sensor according to claim 1, wherein the magnetosensitive probe is a Hall effect sensor.
3. A sensor according to claim 2, further comprising a signal processor for processing a signal produced by the magnetic position sensor and representing the position of the moveable part relative to the stator.  
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4. A sensor according to claim 3, wherein the signal processor and the magnetosensitive probe are parts of the same integrated circuit.
5. A sensor according to claim 3, or 4, wherein the sensor has two power terminals and the signal processor is operable to output the signal representing the position of the moveable part relative to the stator on the power terminals.  
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6. A sensor according to claim 5 wherein the said signal is a Pulse Code Modulated signal.
7. A sensor according to claim 3, 4, 5, or 6, wherein the signal processor is operable to provide fault indication and/or part identification.  
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8. A sensor according to claim 3, 4, 5, 6, or 7, wherein the signal processor is operable to provide temperature compensation.
9. A sensor according to any preceding claim in combination with a fuel pump.  
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10. A sensor according to any preceding claim, wherein at least the magnetic position sensor is encapsulated in encapsulant.
11. A sensor according to claim 10, wherein the encapsulant is vinyl ester resin.
- 5 12. A sensor according to any one of claims 3 to 9, wherein the signal processor is programmable to calibrate the output of the sensor to the shape of a fuel tank.
13. A vehicle comprising a sensor according to any preceding claim.
14. A vehicle comprising a computer and a sensor according to any one of 10 claims 1 to 11, wherein the said computer is arranged to calibrate the output of the sensor to the shape of a fuel tank of the vehicle.
15. A sensor substantially as hereinbefore described with reference to the accompanying drawings.
16. A vehicle comprising a sensor according to claim 15.
- 15 17. A fuel tank containing a fuel level sensor according to any one of claims 1 to 12 and 15.